

In re: Hayes  
Serial No. 10/632,320  
Filed: August 1, 2003  
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**Amendment to the Drawings**

The attached drawing sheet, including Figures 2A-2C replaces sheet two of the eight drawing sheets.

Attached: One (1) drawing sheet.

**REMARKS**

Applicant appreciates the thorough examination of the present application as reflected by the Office Action. Applicant also appreciates the allowance of Claims 9-12 and the indication of allowable subject matter in Claims 7, 20 and 24-26. Applicant submits that the present application is in form for allowance for the reasons discussed below. The rejections in the present Office Action substantially correspond to those in the preceding Office Action. Accordingly, for the Examiner's convenience, only new issues will be addressed herein. However, to assure that this submission is fully responsive, Applicant's previous Amendment is incorporated herein by reference as if set forth in its entirety.

**The Drawing Objection:**

The drawings were objected to as failing to comply with 37 CFR 1.84(p)(5) because they "include the following reference character(s) not mentioned in the description: **The label number "1001" in Fig. 2A submitted on January 13, 2006.**" Office Action, p. 2.

Applicant wishes to thank the Examiner for his time and courtesy during the telephone interview on May 30 where the drawing objection was discussed. The corrected drawing and amendment to the specification adding the label number "1001" in Fig. 2A to the description are submitted to overcome the objection, as agreed upon during the May 30 telephone interview.

**Claims 7 and 20 Are in a Form Indicated as Allowable:**

Claims 7 and 20 have been amended into independent form. Accordingly, in light of the indicated allowable subject matter in these claims as stated at page 8 of the Office Action, these claims are now in form for allowance.

**Claim 23 is Not Anticipated by Geeraert:**

Claim 23 stands rejected under 35 U.S.C. § 102(e) as being anticipated by US Patent

6,904,296 by Geeraert et al ("Geeraert"). Office Action, p. 3. The Office Action asserts, among other things, "Geeraert et al disclose ... an audio driver circuit (15) coupled through a balanced feed (17) to the speaker (6) (Col 3, Line 45 and 50) (Fig. 3)." Office Action, p. 3. However, Geeraert does not disclose a balanced feed to the speaker (6). Instead, Geeraert discloses a balanced power amplifier stage (17) coupled to the antenna (7). *See*, Geeraert, Col. 3, lines 44-53, Fig. 3. As far as the speaker (6) is concerned, Geeraert recites "audio signals are fed to the speaker (6) through an amplifier (12)." Geeraert, Col. 3, lines 33-34. Thus, even assuming the balanced power amplifier (17) were a balanced feed, it is not to the speaker. Accordingly, the rejection of Claim 23 should be withdrawn for at least these reasons.

In addition, the Office Action asserts "Geeraert et al disclose ... a planar antenna (7); a speaker (6), wherein the speaker is integrated with the planar antenna (Fig. 3)." Office Action, p. 3. However, Applicant respectfully disagrees that Figure 3 discloses a speaker that is integrated with a planar antenna. There is an amplifier (12), a codec (15), a RF stage (16), and then an amplifier stage between the speaker and the antenna. However, as stated in the present specification:

The terms "integrated" or "integral" mean that the flat-panel speaker 130 and the planar antenna 140 are combined so that at least a portion of the planar antenna 140 is etched, printed or otherwise formed on, attached to, and/or supported by the substrate forming the flat-panel speaker 130.

Specification, p. 10, lines 3-6. Figure 3 of Geeraert clearly does not disclose or suggest such an integrated speaker and planar antenna as recited in Claim 23. Accordingly, the rejection of Claim 23 should also be withdrawn for at least these additional reasons.

**Claims 1-6, 8, 13-19, and 27-33 are Patentable Over the Cited Art:**

Claims 1-6, 8, 13-19, and 27-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ying et al (US Patent 6,995,715) ("Ying") in view of Denda et al (US Patent 6,480,614) ("Denda"). Office Action, p. 3. Applicant notes that the Ying patent corresponds to the Ying publication relied on in the previous Office Action. Accordingly, the applicable arguments from Applicant's previous amendments, previously incorporated by

reference, are applicable to the rejections based on the Ying patent. To simplify the Examiner's reconsideration of the rejections, only the newly raised issues in light of the reliance on Denda will be addressed below.

In rejecting independent Claim 1, the Office Action states, among other things, "Denda et al disclose in Fig. 1 a conventional flat-panel speaker (Denda et al. Col. 1, Line 12)." Office Action, p. 4. However, while Denda may disclose a planar acoustic transducer, it does not disclose a flat-panel speaker "formed of a piezo electric material" as recited in amended independent Claim 1.1 Such a flat-panel piezo electric material speaker is distinct from the coil and magnet design described in Denda. *See, e.g.*, Denda, Col. 3, lines 18-32 and Fig. 11. Accordingly, the rejection of independent Claim 1 should be withdrawn for at least these reasons.

Furthermore, there is no clear and distinct motivation for an ordinary person skilled in the art to combine Ying with Denda as required to support an obviousness rejection. In fact, Denda appears to teach away from embodiments of reduced size to meet the requirements of wireless terminals, such as cell phones. Embodiments of Denda are configured with a large number of magnets and coils so that "a large amount of volume can be outputted" (Denda, Col. 14, Line 9) and/or large enough to be "covered with a protecting material ... so that a flat speaker for a vehicle is thereby formed and operates as a sun visor." Denda, Col. 14, line 9 and Col. 19, lines 48-51; Fig. 17. It is not even clear the device of Denda would fit in the speaker space of Ying. Also, Applicant's representative can find no mention in Ying of a "flat-panel speaker" or a disclosure or suggestion of any embodiment or configuration that would be specifically favorable to using a flat-panel speaker. Accordingly, the rejection of Claim 1 should also be withdrawn for at least these additional reasons.

In rejecting independent Claim 15, as with Claim 1, the rejections differ from the previous rejection in the reliance on Denda as disclosing a flat-panel speaker. Claim 15 has been amended to include recitations related to a piezo electric material. Accordingly, independent Claim 15 is patentable at least for the reasons discussed above with reference to Claim 1.

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<sup>1</sup> Applicant notes the specification has been amended above to correct a spelling error where "piezo" appeared

In rejecting independent Claims 27 and 29, the Office Action, among other things, asserts that Ying discloses "a speaker (23) is integrated with the planar antenna (20) (Fig. 1)." Office Action, p. 6. However, as discussed above with reference to the rejection of Claim 23, the present specification provides a definition of "integrated." As with the Geeraert reference discussed above, the speaker 23 and antenna 20 of Ying are not integrated as defined in the present specification and recited in Claims 27 and 29. While Ying does discuss integrating an antenna with an acoustic channel, this does not disclose or suggest integration with a flat-panel speaker as recited in Claims 27 and 29. *See*, Ying, Col. 4, lines 1-8, 50-53. Accordingly, the rejections of independent Claims 27 and 29 should be withdrawn for at least these reasons. Furthermore, the rejections of Claims 27 and 29 should also be withdrawn as Ying and Denda cannot properly be combined in the manner relied on for the reasons discussed above with reference to Claim 1.

The rejected dependent claims are patentable at least based on their dependence from patentable independent claims as discussed above. In addition, various of the dependent claims are separately patentable. For example, Claim 2 recites the speaker is integrated with the internal antenna and, accordingly, Claim 2 is separately patentable for reasons substantially similar to those discussed above with reference to Claims 23, 27 and 29.

Regarding Claim 3, Applicant submits that Ying does not disclose "the flat-panel speaker and the internal antenna each comprise conductive portions that reside on a first primary surface of a common substrate" as asserted in the Office Action. Office Action, p.4. In fact Ying states "at least a portion of the antenna conductive element is formed directly onto the substrate of the acoustic channel." Ying, Col. 13, lines 5 and 6 (emphasis added). As discussed previously, this reference is to the acoustic channel, not a speaker. Accordingly, Claim 3 is also separately patentable for at least these reasons.

Regarding Claim 13, Applicant submits Ying does not disclose "the flat-panel speaker is configured to act as a parasitic element to the internal antenna" as asserted in the Office Action. Office Action, p.5. The portion of Ying cited by the Office Action states "the acoustic channel having a wall with an enclosed space and an associated length and width, the

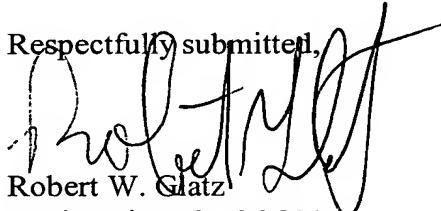
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acoustic channel adapted, during operation, to guide the output of a speaker to a target location." Ying, Col. 12, lines 50-55. As such, this describes that the length and width of the acoustic channel are being adapted to guide the output of the speaker, or the sound through the channel. There is no disclosure or suggestion in Ying of configuring a speaker to act as a parasitic element to the internal antenna. Accordingly, Claim 13 is also separately patentable for at least these reasons. Dependent Claims 14, 16, 28 and 30 are separately patentable for similar reasons based on recitations related to a speaker as a parasitic element therein.

### CONCLUSION

Applicant respectfully submits that, for at least the reasons discussed above, the references cited in the present rejections do not disclose or suggest the present invention as claimed. Accordingly, Applicant respectfully requests allowance of all the pending claims and passing this application to issue.

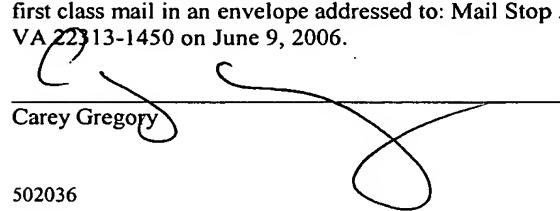
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Carey Gregory

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